

GenCore version 5.1.3
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OM nucleic - nucleic search, using sw model

Run on: February 16, 2003, 15:49:44 : Search time 215.94 Seconds
(without alignments)
14704.597 Million cell updates/sec

Title: US-09-497-967-102
Perfect score: 1410
Sequence: 1 atgaagaacaacatcctggt.....cttactacctgctgtaataa 1410

Scoring table: IDENTITY_NUC

Gapop 10.0 , Gapext 1.0

Searched: 2185239 seqs, 1125999159 residues

Total number of hits satisfying chosen parameters: 4370478

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : N_Geneseq_101002.*
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21: /SIDS2/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT.*
22: /SIDS2/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT.*
23: /SIDS2/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT.*
24: /SIDS2/gcgdata/geneseq/geneseqn-emb1/NA2002.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	1410	100.0	1410	21 AAA97089	Synthetic I. Multi
2	1404	99.6	1404	21 AAA97040	55kd i-antigen syn
3	1400.8	99.3	1404	21 AAA97065	Synthetic 55kd i-a
4	784.4	55.6	1410	21 AAA97060	55kd i-antigen cod
5	782.6	55.5	1404	21 AAA97038	55kd i-antigen nuc
6	782.6	55.5	1404	21 AAA52136	55 kDa i-antigen g
7	138	9.8	138	21 AAA97075	G5 synthetic gene
c	123	8.7	123	21 AAA97076	G5 synthetic gene
9	105	7.4	117	21 AAA97071	G5 synthetic gene

c	10	104	7.4	104	21	AAA97072	G5 synthetic gene
c	11	100	7.1	100	21	AAA97073	G5 synthetic gene
c	12	100	7.1	100	21	AAA97080	G5 synthetic gene
c	13	99	7.0	99	21	AAA97077	G5 synthetic gene
c	14	95	6.7	95	21	AAA97074	G5 synthetic gene
c	15	95	6.7	95	21	AAA97078	G5 synthetic gene
c	16	95	6.7	95	21	AAA97083	G5 synthetic gene
c	17	94	6.7	94	21	AAA97079	G5 synthetic gene
c	18	94	6.7	94	21	AAA97085	G5 synthetic gene
c	19	92	6.5	92	21	AAA97084	G5 synthetic gene
c	20	92	6.5	92	21	AAA97086	G5 synthetic gene
c	21	92	6.5	92	21	AAA97087	G5 synthetic gene
c	22	90	6.4	90	21	AAA97082	G5 synthetic gene
c	23	89	6.3	89	21	AAA97081	G5 synthetic gene
c	24	86	6.1	95	21	AAA97088	G5 synthetic gene
c	25	63.2	4.5	1326	21	AAA97036	48kd i-antigen nuc
c	26	63.2	4.5	2486	21	AAA97037	Nucleotide sequenc
c	27	63.2	4.5	2011	21	AAA52134	pbIC3 construct c
c	28	61.6	4.4	1326	21	AAA52135	48 kDa i-antigen g
c	29	38.2	2.7	349980	22	AAH68528	C glutamicum codin
c	30	38.2	2.7	4403765	22	AAI99683	Mycobacterium tube
c	31	38.2	2.7	4411529	22	AAI99682	Mycobacterium tube
c	32	37.4	2.7	18609	22	AAS21769	Human gene for col
c	33	37.2	2.6	3946	18	AAT93610	Mycobacterium tube
c	34	37	2.6	785	23	ABL28537	Mycobacterium tube
c	35	37	2.6	1829	23	ABL28536	Drosophila melanog
c	36	36.2	2.6	913	18	AAT91476	Drosophila melanog
c	37	36.2	2.6	913	18	AAT91413	Mycobacterium tube
c	38	36.2	2.6	913	19	AAV64462	Mycobacterium tube
c	39	36.2	2.6	913	19	AAV44354	M. tuberculosis lm
c	40	36.2	2.6	913	20	AAZ19264	Mycobacterium tube
c	41	36.2	2.6	913	20	AAZ19052	M. tuberculosis an
c	42	35.8	2.5	1954	21	AAC44830	M. tuberculosis re
c	43	35.8	2.5	2017	21	AAZ56972	Arabidopsis thalia
c	44	35.8	2.5	2413	19	AAV41261	Arabidopsis pyruva
c	45	35.4	2.5	4863	22	AAK52286	Chlamydomonas rein
							Human polynucleoti

ALIGNMENTS

RESULT 1
AAA97089
ID AAA97089 standard; DNA; 1410 BP.
XX
XX AAA97089;
AC
XX
XX
DT 18-DEC-2000 (first entry)
DT
DE Synthetic I. Multifiliis G5 isolate i-antigen gene.
DE
XX
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;
KW white spot disease; freshwater fish; immune response; infection control.
XX
XX Ichthyophthirius multifiliis.
OS
OS Synthetic.
XX
XX
PN WO200046373-A1.
XX
PD 10-AUG-2000.
XX
XX
PF 04-FEB-2000; 2000WO-US02962.
XX
PR 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.
PR 27-APR-1999; 99US-0131121.
XX
PA (UYGE-) UNIV GEORGIA RES FOUND INC.
PA (CORR) CORNELL RES FOUND INC.
PA (CLAR/) CLARK T G.
PA (DICK/) DICKERSON H W.
PA (LINT/) LIN T.

XX
PI Clark TG, Dickerson HW, Lin T;
XX WPI; 2000-506071/45.
XX
XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
PT infection in fish -
XX
XX Example 5; Figure 2b; 144pp; English.
XX
XX This invention relates to novel i-antigen polypeptide sequences.
CC I-antigens or immobilisation antigens are common to a variety of
CC hymenostomatid ciliates and their expression varies in response to
CC environmental stimuli. This invention relates to i-antigens in
CC Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
CC invention includes two polypeptide and polynucleotide sequences for two
CC i-antigens, of 48 and 55 kb. Also included in the invention are
CC antibodies capable of binding to the nucleotide sequences and a method
CC for identifying I. multifiliis serotypes using the nucleotide sequences.
CC A composition (containing the i-antigen nucleotide) capable of eliciting
CC an immune response in fish is useful for prophylaxis, treatment or for
CC controlling I. multifiliis infection in fish. Polynucleotide or protein
CC vaccines comprising a portion of the amplified product encoding an
CC antigenic i-antigen polypeptide obtained is also useful for treating or
CC preventing I. multifiliis infection in fish. Sequences AAA97036-A97042,
CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
CC fragments identified in the invention. Sequences AAA97043-A97064
CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX
XX Sequence 1410 BP; 321 A; 418 C; 339 G; 332 T; 0 other;
SQ

Query Match 100.0%; Score 1410; DB 21; Length 1410;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1410; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGAGAACACATCTGGTGATCCTGATCATCTCTGTTCATCAACAGATCAAGTCT 60
DB 1 ATGAAGAACACATPCTGGTGATCCTGTGATCATCTCTGTTCATCAACAGATCAAGTCT 60
QY 61 GCTAACTGTCTGTGGAAACCGAGACACACACCGCTGGACAGGTGGACACCTGGAAAC 120
DB 61 GCTAACTGTCTGTGGAAACCGAGACACACACCGCTGGACAGGTGGACACCTGGAAAC 120
QY 121 CCTGCTAACTGTGTGAAGTGTGAGAGAACTTCTACTACAAACACCGCTGCTGTTTCGTG 180
DB 121 CCTGCTAACTGTGTGAAGTGTGAGAGAACTTCTACTACAAACACCGCTGCTGTTTCGTG 180
QY 181 CCTGGAGCTTCTACTCTACCCCTTGCTCCAGAGAGAGACGCTGGAGCTACGCCCTAAC 240
DB 181 CCTGGAGCTTCTACTCTACCCCTTGCTCCAGAGAGAGACGCTGGAGCTACGCCCTAAC 240
QY 241 CCTCCTGCTACCGCTAACCTGGTGACCCAGTGTAAAGTGTCTGCTGTGAACCGGT 300
DB 241 CCTCCTGCTACCGCTAACCTGGTGACCCAGTGTAAAGTGTCTGCTGTGAACCGGT 300
QY 301 ATCGCTGGAGAGGTACCGACTACCGTGTCTATCATACCCAGTGTGTGAACTGTCCGATC 360
DB 301 ATCGCTGGAGAGGTACCGACTACCGTGTCTATCATACCCAGTGTGTGAACTGTCCGATC 360
QY 361 AACTTCTACAGAGAGAGCTCTCTAACTTCAACGCTGGAGCTTCTACTGTACCGCTTGT 420
DB 361 AACTTCTACAGAGAGAGCTCTCTAACTTCAACGCTGGAGCTTCTACTGTACCGCTTGT 420
QY 421 CCTGTGAACCGCTGGAGAGGTCTGTACCGCTGGAGAGCGCTGTACCATCTGGCTCAG 480
DB 421 CCTGTGAACCGCTGGAGAGGTCTGTACCGCTGGAGAGCGCTGTACCATCTGGCTCAG 480
QY 481 TCTAACTGGCTTCTCTACCGAAACCGCTCTGGACACGAGTGTACCCAGCTACGCTG 540
DB 481 TCTAACTGGCTTCTCTACCGAAACCGCTCTGGACACGAGTGTACCCAGCTACGCTG 540

DB 481 TGTAACTGGCTTGTCTACCGAAACCGCTCTGGACACGAGTGTACCCAGCTACGCTG 540
QY 541 CGCTCTTTACCGAGTGTGTGAAGTGTGCGCTGAACCTTCTACTACACGGAACACGGA 600
DB 541 CGCTCTTTACCGAGTGTGTGAAGTGTGCGCTGAACCTTCTACTACACGGAACACGGA 600
QY 601 AACACCCCTTTTCAACCCCTGGAAAGTCTCAGTGTACCCCTTGTCTGTATCAAGCCCTGCT 660
DB 601 AACACCCCTTTTCAACCCCTGGAAAGTCTCAGTGTACCCCTTGTCTGTATCAAGCCCTGCT 660
QY 661 AACGTGGCTCAGGCTACCCCTGGGAACGAGCTACCATCACCGCTAGTGTAAAGTGGCT 720
DB 661 AACGTGGCTCAGGCTACCCCTGGGAACGAGCTACCATCACCGCTAGTGTAAAGTGGCT 720
QY 721 TGTCTCAGCGAAACCATCTCTGTCTGGTGAACAACTGGGTGGTGTCAAGAACACGAG 780
DB 721 TGTCTCAGCGAAACCATCTCTGTCTGGTGAACAACTGGGTGGTGTCAAGAACACGAG 780
QY 781 TGTACCAACTGTCTCTTAACCTTCTACAAACAAACGCTCCTAACTTCAACCCCTGGAAAC 840
DB 781 TGTACCAACTGTCTCTTAACCTTCTACAAACAAACGCTCCTAACTTCAACCCCTGGAAAC 840
QY 841 TCTACCTGTCTGCTGTCTGTCTGTCTGTCTGTCTGTCTGTCTGTCTGTCTGTCTGTCT 900
DB 841 TCTACCTGTCTGCTGTCTGTCTGTCTGTCTGTCTGTCTGTCTGTCTGTCTGTCTGTCT 900
QY 901 GCTGCTACCCCTGGCTTAAGCAGTGTAAACATCGCTTGTCTGTACGGAACCGCTATCGCTTCT 960
DB 901 GCTGCTACCCCTGGCTTAAGCAGTGTAAACATCGCTTGTCTGTACGGAACCGCTATCGCTTCT 960
QY 961 GGAGCTACCAACTAGTGTATCTCCAGCTGGATCTTCTGCTGTAAAGCTTGTCTGTCTGTCT 1020
DB 961 GGAGCTACCAACTAGTGTATCTCCAGCTGGATCTTCTGCTGTAAAGCTTGTCTGTCTGTCT 1020
QY 1021 TTGACGGAACAACTTCCAGCTGGATCTTCTGCTGTAAAGCTTGTCTGTCTGTCTGTCTGT 1080
DB 1021 TTGACGGAACAACTTCCAGCTGGATCTTCTGCTGTAAAGCTTGTCTGTCTGTCTGTCTGT 1080
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DB 1081 GTGACGAGGTGTGGCTACCGCTGGAGAAACCGCTACCCCTGATCGCTCAGTGTGCTCTG 1140
QY 1141 GAGTGTCTGTGTGAACCGTGTGACCGAGCAACACCTCTACCTACCAAGCAGGCTGCT 1200
DB 1141 GAGTGTCTGTGTGAACCGTGTGACCGAGCAACACCTCTACCTACCAAGCAGGCTGCT 1200
QY 1201 TCTGAGTGTGTGAAGTGTGCTTAACCTTCTACACCAAGCAGCAGCTGGTGGCT 1260
DB 1201 TCTGAGTGTGTGAAGTGTGCTTAACCTTCTACACCAAGCAGCAGCTGGTGGCT 1260
QY 1261 GGAATCGACACCTGTACCTTGTGAACAGAGCTGACCTCTGGAGCTGAGGCTAACCTG 1320
DB 1261 GGAATCGACACCTGTACCTTGTGAACAGAGCTGACCTCTGGAGCTGAGGCTAACCTG 1320
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DB 1321 CTGAGTGTGTGAAGAAACATCCAGTGTGACTTTCGCTTAACCTCTCTGTCTATCTCTCTG 1380
QY 1381 CTGCTGATCTTCTTACTTACTTGTCTGTAAATAA 1410
DB 1381 CTGCTGATCTTCTTACTTACTTGTCTGTAAATAA 1410
RESULT 2
AAA97040
ID AAA97040 standard; DNA; 1404 BP.
XX
AC AAA97040;
XX
DT 18-DEC-2000 (first entry)
XX
DE 55kd i-antigen synthetic gene.
XX

KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;
 KW white spot disease; freshwater fish; immune response; infection control.
 XX Ichthyophthirius multifiliis.
 OS Synthetic.

XX WO200046373-A1.

XX 10-AUG-2000.

XX 04-FEB-2000; 2000WO-US02962.

XX 04-FEB-1999; 99US-0118634.

XX 02-MAR-1999; 99US-0122372.

XX 17-MAR-1999; 99US-0124905.

XX 27-APR-1999; 99US-0131121.

XX (UYGE-) UNIV GEORGIA RES FOUND INC.
 PA (CORR) CORNELL RES FOUND INC.
 PA (CLARK) CLARK T G.
 PA (DICK/) DICKERSON H W.
 PA (LINT/) LIN T.

XX Clark TG, Dickerson HW, Lin T;

XX WPI; 2000-506071/45.

XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
 PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
 PT Infection in fish

XX Claim 5; Page 102; 144pp; English.

CC This invention relates to novel i-antigen polypeptide sequences.
 CC i-antigens or immobilisation antigens are common to a variety of
 CC hymenostomatid ciliates and their expression varies in response to
 CC environmental stimuli. This invention relates to i-antigens in
 CC Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
 CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
 CC invention includes two polypeptide and polynucleotide sequences for two
 CC i-antigens, of 48 and 55 kd. Also included in the invention are
 CC antibodies capable of binding to the nucleotide sequences and a method
 CC for identifying i. multifiliis serotypes using the nucleotide sequences.
 CC A composition (containing the i-antigen nucleotide) capable of eliciting
 CC an immune response in fish is useful for prophylaxis, treatment or for
 CC vaccines comprising a portion of the amplified product encoding an
 CC antigenic i-antigen polypeptide obtained is also useful for treating or
 CC preventing i. multifiliis infection in fish. Sequences AAA97042, 900
 CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
 CC fragments identified in the invention. Sequences AAA97043-A97064
 CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
 CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
 CC AAB25893-B25906 represent i-antigen protein and peptide sequences.

XX Sequence 1404 BP; 317 A; 418 C; 339 G; 330 T; 0 other;

Query Match 99.6%; Score 1404; DB 21; Length 1404;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1404; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGAAGAACACATCCTGGTGATCCTGATCATCTCTGTTCATCAACAGATCAAGTCT 60

DB 1 ATGAAGAACACATCCTGGTGATCCTGATCATCTCTGTTCATCAACAGATCAAGTCT 60

QY 61 GCTAACTGCTGTGGGACCGAGACCAACACCGCTGGACAGGTGGACACCTGGGAACC 120

DB 61 GCTAACTGCTGTGGGACCGAGACCAACACCGCTGGACAGGTGGACACCTGGGAACC 120

QY 121 CCTGCTAACTGCTGAACTGTGACAGAACTTCTACTACAAACCGCTGCTGCTTCGTCG 180

DB 121 CCTGCTAACTGCTGAACTGTGACAGAACTTCTACTACAAACCGCTGCTGCTTCGTCG 180

QY 181 CCTGGAGCTTCTACCTGTACCCCTTGTCTCTCAGAAAGACGCTGGAGCTCAGCCTAAC 240
 DB 181 CCTGGAGCTTCTACCTGTACCCCTTGTCTCTCAGAAAGACGCTGGAGCTCAGCCTAAC 240
 QY 241 CCTCTGCTACCGCTAACCTGGTGACCCAGTGAAGTGTCTCTCTGAAACCGCT 300
 DB 241 CCTCTGCTACCGCTAACCTGGTGACCCAGTGAAGTGTCTCTCTGAAACCGCT 300
 QY 301 ATCGCTGGAGGAGCTACCGACTACGCTGTATCATCACCGAGTGTGTAACTGTGCGCATC 360
 DB 301 ATCGCTGGAGGAGCTACCGACTACGCTGTATCATCACCGAGTGTGTAACTGTGCGCATC 360
 QY 361 AACTTCTAACAGAGAACCGCTCTCAACTTCAACGCTGGAGCTTCTACCTGTACCCCTTGT 420
 DB 361 AACTTCTAACAGAGAACCGCTCTCAACTTCAACGCTGGAGCTTCTACCTGTACCCCTTGT 420
 QY 421 CCTGTGAACCGCTGGAGGAGCTCTGACCGCTGGAAACGCTGCTACCATCTGCTGCTCAG 480
 DB 421 CCTGTGAACCGCTGGAGGAGCTCTGACCGCTGGAAACGCTGCTACCATCTGCTGCTCAG 480
 QY 481 TGTAAAGCTGGCTTGTCTCTACCGGAACCGCTCTGGAGAGTGCACACCGACTACCTG 540
 DB 481 TGTAAAGCTGGCTTGTCTCTACCGGAACCGCTCTGGAGAGTGCACACCGACTACCTG 540
 QY 541 CGCTCTTTCACCGAGTGTGTGAAGTGTCCCTTGAACCTTCTACTACAACGGAACACCGGA 600
 DB 541 CGCTCTTTCACCGAGTGTGTGAAGTGTCCCTTGAACCTTCTACTACAACGGAACACCGGA 600
 QY 601 AACACCCCTTTCACCCCTGGAAAGTCTCAGTGTACCCCTTGTCTCTGCTGCTATCAAGCCTGCT 660
 DB 601 AACACCCCTTTCACCCCTGGAAAGTCTCAGTGTACCCCTTGTCTCTGCTGCTATCAAGCCTGCT 660
 QY 661 AAGTGGCTCAGGCTACCTGGGAAACGCTACCATCAGCGCTCAGTGTAAAGCTGGCT 720
 DB 661 AAGTGGCTCAGGCTACCTGGGAAACGCTACCATCAGCGCTCAGTGTAAAGCTGGCT 720
 QY 721 TGTCTGACGGAACCATCTCTGCTCTGGAGTGAACAACTGGTGGCTCAGAACACCGAG 780
 DB 721 TGTCTGACGGAACCATCTCTGCTCTGGAGTGAACAACTGGTGGCTCAGAACACCGAG 780
 QY 781 TGTACCAACTGTCTCTTAACTTCTACAACAAACGCTCTCACTTCAACCCCTGGAAAC 840
 DB 781 TGTACCAACTGTCTCTTAACTTCTACAACAAACGCTCTCACTTCAACCCCTGGAAAC 840
 QY 841 TCTACCTGTCTGCTTGTCTCTGCTTAAAGGACTACGAGCTGAGGCTACCGCTGGAGGA 900
 DB 841 TCTACCTGTCTGCTTGTCTCTGCTTAAAGGACTACGAGCTGAGGCTACCGCTGGAGGA 900
 QY 901 GCTGCTACCCCTGGCTTAAACAGTGTAAACATCGCTTCTCTGACGGAACCGCTATCGCTTCT 960
 DB 901 GCTGCTACCCCTGGCTTAAACAGTGTAAACATCGCTTCTCTGACGGAACCGCTATCGCTTCT 960
 QY 961 GGAGCTACCAACTACGCTGATCCTCGACAGCCGAGTGTCTGAACTGTGCTGCTTAACCTTCTAC 1020
 DB 961 GGAGCTACCAACTACGCTGATCCTCGACAGCCGAGTGTCTGAACTGTGCTGCTTAACCTTCTAC 1020
 QY 1021 TTCGACGGAACCAACTTCCAGCTGGATCTTCTCGCTGTGTAAGGCTTCTCTGCTGCTAACAAAG 1080
 DB 1021 TTCGACGGAACCAACTTCCAGCTGGATCTTCTCGCTGTGTAAGGCTTCTCTGCTGCTAACAAAG 1080
 QY 1081 GTGACGAGGAGCTGTGGCTTACCGCTGGAGAACCCGCTACCCCTGATCGCTCAGTGTGCTCTG 1140
 DB 1081 GTGACGAGGAGCTGTGGCTTACCGCTGGAGAACCCGCTACCCCTGATCGCTCAGTGTGCTCTG 1140
 QY 1141 GAGTGTCTGCTGGAACCGGCTGCTGACCGAGGAACCACTTCTACCTACAAGCAGGCTGCT 1200
 DB 1141 GAGTGTCTGCTGGAACCGGCTGCTGACCGAGGAACCACTTCTACCTACAAGCAGGCTGCT 1200
 QY 1201 TCTGAGTGTGTAAGTGTGCTGCTAACTTCTACACCAACGAGCAGACCGCTGGTGGCT 1260
 DB 1201 TCTGAGTGTGTAAGTGTGCTGCTAACTTCTACACCAACGAGCAGACCGCTGGTGGCT 1260
 QY 1261 GGAATCGACACCTGTACCTCTTGTAAACAAGAGCTGACCTCTGAGGCTGAGGCTAACCTG 1320

|||||
Db 1261 GGAATCGACACCTGTACCTCTTTGTAACAAGAGCTGACCTCTGGAGCTGAGGCTTAACCTG 1320
QY 1321 CCGAGCTCTGCTAAGAGAACATCCAGTGTGACTTCGCTAACTTCCTCTATCTCTCTG 1380
Db 1321 CCGAGCTCTGCTAAGAGAACATCCAGTGTGACTTCGCTAACTTCCTCTATCTCTCTG 1380
QY 1381 CTGCTGATCTCTTACTACTCTGCTG 1404
Db 1381 CTGCTGATCTCTTACTACTCTGCTG 1404
RESULT 3
AAA97065
ID AAA97065 standard; DNA; 1404 BP.
XX
AC AAA97065;
XX
DT 18-DEC-2000 (first entry)
XX
DE Synthetic 55kd i-antigen gene sequence.
XX
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;
KW white spot disease; freshwater fish; immune response; infection control.
XX
KW Ichthyophthirius multifiliis.
OS Synthetic.
OS
XX W0200046373-A1.
PN
XX
PD 10-AUG-2000.
XX
XX 04-FEB-2000; 2000WO-US02962.
XX
XX 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.
PR 27-APR-1999; 99US-0131121.
XX
XX (UYGE-) UNIV GEORGIA RES FOUND INC.
XX (CORR) CORNELL RES FOUND INC.
XX (CLAR/) CLARK T G.
XX (DICK/) DICKERSON H W.
XX (LINT/) LIN T.
XX
XX Clark TG, Dickerson HW, Lin T;
PI WPI; 2000-506071/45.
XX
XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
PT infection in fish
XX
XX Example 5; Figure 13; 144pp; English.
XX
XX This invention relates to novel i-antigen polypeptide sequences.
XX I-antigens or immobilisation antigens are common to a variety of
XX hymenostomatid ciliates and their expression varies in response to
XX environmental stimuli. This invention relates to i-antigens in
XX Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
XX of freshwater fish causing ichthyophthiriasis or white spot disease. The
XX invention includes two polypeptide and polynucleotide sequences for
XX i-antigens, of 48 and 55 kD. Also included in the invention are
XX antibodies capable of binding to the nucleotide sequences and a method
XX for identifying I. multifiliis serotypes using the nucleotide sequences.
XX A composition (containing the i-antigen nucleotide) capable of eliciting
XX an immune response in fish is useful for prophylaxis, treatment or for
XX controlling I. multifiliis infection in fish. Polynucleotide or protein
XX vaccines comprising a portion of the amplified product encoding an
XX antigenic i-antigen polypeptide obtained is also useful for treating or
XX preventing I. multifiliis infection in fish. Sequences AAA97036-A97042,
XX and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
XX fragments identified in the invention. Sequences AAA97043-A97064

CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX
SQ Sequence 1404 BP; 317 A; 418 C; 339 G; 330 T; 0 other;
Query Match 99.3%; Score 1400.8; DB 21; Length 1404;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1402; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
QY 1 ATGAGAGAACATCTCTGGTGATCTCTGATCATCTCTCTGTTTCATCAACAGATCAAGTCT 60
Db 1 ATGAGAGAACATCTCTGGTGATCTCTGATCATCTCTCTGTTTCATCAACAGATCAAGTCT 60
QY 61 GCTAACTGTCTGTGGAAACCGAGACCAACACCGCTGGACAGGTGGAGCTGGGAACC 120
Db 61 GCTAACTGTCTGTGGAAACCGAGACCAACACCGCTGGACAGGTGGAGCTGGGAACC 120
QY 121 CCTGCTAACTGTGTGAAGTGTGAGAGAACTTCTACTACAACAGCTGCTGCTTTCGTG 180
Db 121 CCTGCTAACTGTGTGAAGTGTGAGAGAACTTCTACTACAACAGCTGCTGCTTTCGTG 180
QY 181 CCTGGAGCTTCTACCTGTACCCCTTGTCTCAGAAAGAGGAGCTGGAGCTCAGCCTAAC 240
Db 181 CCTGGAGCTTCTACCTGTACCCCTTGTCTCAGAAAGAGGAGCTGGAGCTCAGCCTAAC 240
QY 241 CCTCCTGCTAACCGCTAACCTGTGACCCAGTGAAGTGTCTGCTGGGAACCGCT 300
Db 241 CCTCCTGCTAACCGCTAACCTGTGACCCAGTGAAGTGTCTGCTGGGAACCGCT 300
QY 301 ATCGCTGGAGGAGCTACCGACTACCGTGTATCATCACCAGGTGTGAAGTGTCTGCTGCATC 360
Db 301 ATCGCTGGAGGAGCTACCGACTACCGTGTATCATCACCAGGTGTGAAGTGTCTGCTGCATC 360
QY 361 AACTTCTACAAACGAGACGCTCTAACTTCAACGGCTGGAGCTTCTACCTGTACCGCTTGT 420
Db 361 AACTTCTACAAACGAGACGCTCTAACTTCAACGGCTGGAGCTTCTACCTGTACCGCTTGT 420
QY 421 CCTGTGAACCGCTGTGGAGGAGCTCTGACCGCTGGAAACGCTGCTACCATCTGCTGCTCAG 480
Db 421 CCTGTGAACCGCTGTGGAGGAGCTCTGACCGCTGGAAACGCTGCTACCATCTGCTGCTCAG 480
QY 481 TGTAACTGTGCTTCTCTACCGGAAACCGCTCTGAGCAGCGGAGTGACCAACCGCTACGCTG 540
Db 481 TGTAACTGTGCTTCTCTACCGGAAACCGCTCTGAGCAGCGGAGTGACCAACCGCTACGCTG 540
QY 541 CGCTCTTTTACCGAGTGTGTGAAGTGTGCGCTGAACTTCTACTACAAACGGAACACCGGA 600
Db 541 CGCTCTTTTACCGAGTGTGTGAAGTGTGCGCTGAACTTCTACTACAAACGGAACACCGGA 600
QY 601 AACACCCCTTTTCAACCTTGGAAAGTCTCAGTGTACCCCTTGTCTCTATCAAGCTGCT 660
Db 601 AACACCCCTTTTCAACCTTGGAAAGTCTCAGTGTACCCCTTGTCTCTATCAAGCTGCT 660
QY 661 AACCTGTGCTCAGGCTACCTTGGAAACGAGCTACCATCACCCTCAGTGTAACTGCTGCT 720
Db 661 AACCTGTGCTCAGGCTACCTTGGAAACGAGCTACCATCACCCTCAGTGTAACTGCTGCT 720
QY 721 TGTCTGACGGAACCATCTCTGCTGTGAGTGAACAACTGGGTGCTCAGAACACCGAG 780
Db 721 TGTCTGACGGAACCATCTCTGCTGTGAGTGAACAACTGGGTGCTCAGAACACCGAG 780
QY 781 TGTACCAACTGTGCTCTCTTCTTCTACAAACAAACGCTCCTAACTTCAACCTTGGAAAC 840
Db 781 TGTACCAACTGTGCTCTCTTCTTCTTCTTCTACAAACAAACGCTCCTAACTTCAACCTTGGAAAC 840
QY 841 TCTACCTGTCTCTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCT 900
Db 841 TCTACCTGTCTCTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCT 900
QY 901 GCTGCTACCTTGGCTTAAGCAGTGTAACTGCTGTCTCTGACGGAACCGCTATCTGCTTCT 960
Db 901 GCTGCTACCTTGGCTTAAGCAGTGTAACTGCTGTCTCTGACGGAACCGCTATCTGCTTCT 960

Db	601	AATACTCCTTTCAATCCAGTAAAGTTAATGCACACCTTGTCCGGCAATTAAACCTGCT	660
Qy	661	AAAGTGGCTCAGGCTACCTGGGAAACACGCTACCATCAGCTCAGTGTAACTGGCT	720
Db	661	ATGTTGCTTAAGCTACTTAAAGTAAATGATGCTACAAACCGCATATGTAAAGTTGCA	720
Qy	721	TGTCCTGACGGAAACCATCTCTGCTCGAGTGAACACTGGTGGCTCAGAACACCGAG	780
Db	721	TGCCCTGATGGTACTATAAGTCTGCTGGAGTAAATAATGGTAGCACAACACATGAA	780
Qy	781	TGTACCACTGTGCTCCTAACTTCTACACACACAGCTCCTAACTTCAACCCCTGGAAAC	840
Db	781	TGTACTAATGTGCTCCTAACTTCTACAAATAATATGCTCTTAATTTCAATCCAGTAA	840
Qy	841	TCTACCTGTCTGCTTGTCTCTCTAACAGGACTACGGAGCTGAGGCTACCGCTGGAGGA	900
Db	841	AGTACATGCTACCTTGCCCGACGAAATAAAGATATATGGTGTGAAGCCACTGCGAGTGGT	900
Qy	901	GCTGCTACCTGGCTAAGCAGTGTACATCGCTTGTCTGACGGAAACGCTATCGCTTCT	960
Db	901	GCGGCTACTTTAGCCAAATAATGTATAATGTGATGCCCTGATGGTACTGCAATTTGCTAGT	960
Qy	961	GGAGCTACCAACTACCTGATCCTGTCAGACACCGAGTGTCTGAACTGTCTGCTAACTTCTAC	1020
Db	961	GGAGCAACTAATTTATGTAATATTAACAGAGATGTCTAAATTTGCTGCTAACTTTTAT	1020
Qy	1021	TTGACGGAAACAACTTCAGGCTGGATCTTCGCTGTAAAGGCTTGCTCTGCTAAACAG	1080
Db	1021	TTTGATGGTAAATTTCTAGGCGAGGAGTAGTAGATGCAAGCATGTCACGCAATAA	1080
Qy	1081	GTCAGGAGCTGTGCTACCGCTGAGGACCGCTTACCTCATCGCTCAGTGTCTCTG	1140
Db	1081	GTTTAAGGCGCTGTAGCAACTGACGCTGTACTTAAATTTGCAATGTCSCCTT	1140
Qy	1141	GAGTGTCTCTGCTGGAACCGCTGTACCGGACGCAACACCTCTACCTCAAGCAGCTGCT	1200
Db	1141	GAATGCCCTGCTGCTACTGTACTACCGATGGAACAACATCTACTATAAATAAGCAGCA	1200
Qy	1201	TCTGAGTGTGTGAAGTGTGCTGCTACTCTACACCAACAGCAGCGCTGGTGGCT	1260
Db	1201	TCTGAATGTGTAAATGTGCTGCGCACTTTTATCTACAAATAAATGATTTGGTAGCA	1260
Qy	1261	GGAATGACACCTGTACTCTTTTAAACAAGCTCAACCTCTGAGCTGAGGCTAACCTG	1320
Db	1261	GGTATGTACATCTACTAGTTGTATAAAAAAATAAATTAATCTTGGCGCTGAAGCTAATTA	1320
Qy	1321	CCTGAGTGTGTAGAGACATCCAGTGTGACTTCGCTAACTTCCTGCTATCTCTCTG	1380
Db	1321	CCTGAATCTGTGTAATAAATAATATAATGATTTGCTGCTAAATTTTATCAATTTCCITTA	1380
Qy	1381	CTGCTGATCTCTTACTACCTGCTGTAATAA	1410
Db	1381	TTATGATTTCTTATTTATTTATGATGA	1410
RESULT 5			
ID	AAA97038		
XX	AAA97038 standard; DNA; 1404 BP.		
AC	AAA97038;		
CC	18-DEC-2000 (first entry)		
DT	55kd i-antigen nucleotide sequence.		
XX	Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine; ds;		
DE	white spot disease; freshwater fish; immune response; infection control.		
KW	Ichthyophthirius multifiliis.		
XX	WO200046373-A1.		
OS	10-AUG-2000.		
PN			
XX			
PD			
XX	04-FEB-2000; 2000WO-US02962.		
PF	04-FEB-1999; 99US-0118634.		
XX	02-MAR-1999; 99US-0122372.		
PR	17-MAR-1999; 99US-0124905.		
PR	27-APR-1999; 99US-0131121.		
XX	(UYCE-) UNIV GEORGIA RES FOUND INC.		
PA	(CORR) CORNELL RES FOUND INC.		
PA	(CLAR/) CLARK T G.		
PA	(DICK/) DICKERSON H W.		
PA	(LINT/) LIN T.		
XX	Clark TG, Dickerson HW, Lin T;		
PI	WPI; 2000-506071/45.		
DR	Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius		
PT	multifiliis, useful for prophylaxis and treatment of Ichthyophthirius		
PT	infection in fish		
XX	Claim 5; Figure 3; 144pp; English.		
PS	This invention relates to novel i-antigen polypeptide sequences.		
XX	i-antigens or immobilisation antigens ar common to a variety of		
CC	hymenostomatid ciliates and their expression varies in response to		
CC	environmental stimuli. This invention relates to i-antigens in		
CC	Ichthyophthirius multifiliis, a protozoan which is an obligate parasite		
CC	of freshwater fish causing ichthyophthiriasis or white spot disease. The		
CC	invention includes two polypeptide and polynucleotide sequences for two		
CC	i-antigens, of 48 and 55 kb. Also included in the invention are		
CC	antibodies capable of binding to the nucleotide sequences and a method		
CC	for identifying I. multifiliis serotypes using the nucleotide sequences.		
CC	A composition (containing the i-antigen nucleotide) capable of eliciting		
CC	an immune response in fish is useful for prophylaxis, treatment or for		
CC	controlling I. multifiliis infection in fish. Polynucleotide or protein		
CC	vaccines comprising a portion of the amplified product encoding an		
CC	antigenic i-antigen polypeptide obtained is also useful for treating or		
CC	preventing I. multifiliis infection in fish. Sequences AAA97038-A97042,		
CC	and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene		
CC	fragments identified in the invention. Sequences AAA97043-A97064		
CC	(excluding AAA97060) and AAA97071-A97088 represent primers used in the		
CC	isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and		
CC	AAB25893-B25906 represent i-antigen protein and peptide sequences.		
XX	Sequence 1404 BP; 447 A; 240 C; 257 G; 460 T; 0 other;		
SQ	Query Match 55.5%; Score 782.6; DB 21; Length 1404;		
	Best Local Similarity 72.5%; Pred. No. 9.6e-216;		
	Matches 1013; Conservative 0; Mismatches 384; Indels 0; Gaps 0;		
Qy	1	ATGAAGAACAACATCCCTGGTGGTGCCTGATCATCTCTCTGTTCAATCAACAGATCAAGTCT	60
Db	1	ATGAAAAATAATATTTAGTAATATTGATTTATTTCAATTTATTAATAATGCTGCTTCGTT	60
Qy	61	GCTAACTGCTCTGGGAACCGAGACCAACCGCTGGACAGGTGGACGCTGGGAACC	120
Db	61	GCTAATGCTCTGTTGGAACTGAACTTAACACAGCCGGATAAGTTGATGCTAGGAACT	120
Qy	121	CCTGCTAACTGTGTGAAGTGTCAAGAAGAACTTCTACTACAAACACGCTGCTGCTTCGTG	180
Db	121	CCTGCAAAATGTGTTAATTTAGAAAAAAGCTTTTATTAATAATAATGCTGCTTCGTT	180
Qy	181	CCTGGAGCTTCTACTGTACCCCTTGTCTCAGAAGGACGCTGGAGCTCAGCCTAAC	240
Db	181	CCTGGTCTAGTACGTACACCTTGTCCATATAAAAAAGATGCTGCTTAAACCAAT	240
Qy	241	CCTCCTGCTACCGCTAACTGGTGACCCAGTGTAACTGAAGTGTCTGCTGGAACCGCT	300
Db	241	CCACTGCTACTGCTAATTTAGTCACATAATGTAAACGTTAAATGCCCTGCTGTACCGCA	300
Qy	301	ATCGCTGGAGGAGCTACCGACTACGCTGCTATCATCACCAGTGTGTGGAATCTGCGCATC	360

CC transgenic host. Transgenic ciliated protozoa are useful as live vaccines
CC for stimulating an immune response in a vertebrate. The transgenic
CC protozoan host cells are also useful for producing polyclonal antibodies
CC (claimed). In particular, Tetrahymena expressing ichthyophthirius
CC multifiliis immobilization-antigen (i-antigen) protein on their surface
CC are effective vehicles for vaccination of freshwater fish against
CC infection by I. multifiliis.
XX
SQ

Sequence 1404 BP; 447 A; 241 C; 256 G; 460 T; 0 other;

Query Match 55.5%; Score 782.6; DB 21; Length 1404;
Best Local Similarity 72.5%; Pred. No. 9.6e-216;
Matches 1013; Conservative 0; Mismatches 384; Indels 0; Gaps 0;

QY 1 ATGAAGAACAACATCGTGGTGATCGTGCATCTCTGTTTCATCAACACAGATCAAGTCT 60
DB 1 ATGAAAATAATATTTAGTATATATGATTTTCATTATTTATCAATTAATTAATCT 60
QY 61 GCTAACTGTCCTGTGGAAACCGAGACCAACACCGCTGGACAGGTGGACGACCTGGGAACC 120
DB 61 GCTAATTTGTCCTGTGGAACTGAAACTTAACACAGCGGATAAGTTGATGATCTAGSAACT 120
QY 121 CCTGCTAACTGTGNACTGTGAGAACTTCTACTACAAACCGCTGCCTTTCGTT 180
DB 121 CCTGCAAAATTTGTTAAATTTGTTAGAAAACCTTTTATTAATAATGCTGCTGCTTTCGTT 180
QY 181 CCTGGAGCTTCTACCTGTACCCCTTGTCTCAGAAAGAGCGCTGGAGCTCAGCCTAAC 240
DB 181 CCTGGTGCTAGTACGTGTACACCTGTCCATAAAAAAAGATGCTGGTTCACCAAT 240
QY 241 CCTGCTGCTACCGCTAACCTGGTGACCCAGTGAACGTGAAGTGTCTGCTGGAAACCGCT 300
DB 241 CCACCTGCTACTGCTAAATTTAGTACATTAATGTAACGTTAAATGCCCTGCTGGTACC 300
QY 301 ATGCGTGGAGGAGTACCGACATACGCTGTATCATCACCGAGTGTGAACGTGCGCATC 360
DB 301 ATGCGAGGTGGAGAACAGATTATGAGCAATATGAGCAATTAATGTAATGTAATGTAAT 360
QY 361 AACTTCTACAACGAGAACGCTCCTAACTTCAACGCTGGAGCTTCTACCTGTACCGCTTGT 420
DB 361 AATTTTATTAATGAAATGCTCCAAATTTTAAATGAGGTGCTAGTACATGACACGCTTGT 420
QY 421 CTTGTGAACCGGTGGGAGAGCTGTGACCGCTGGAACGCTGTACCATCGTGGCTCAG 480
DB 421 CCGGTAACAGAGATTGGTGGTGCAATGACTGCTGTGTAAATGCCGCTACCATAGTCCATAA 480
QY 481 TGTAACGTGGCTTGTCTTACCGGAACCGCTCTGGACGCGGAGTGACACCGCACTACGTTG 540
DB 481 TGTAACGTGCGATGCTCTACTGCTACTGCTACCTGATGATGGAGTAACCTGATTTGTT 540
QY 541 CGCTCTTTCACCGAGTGTGTAAGTGTGCGCTGAACCTTCTACTACAACGGAAACACGGA 600
DB 541 AGATCATTCACAGATGTGTAAATGTAGACTTAACTTTACTATAATGTTAATGTTAATGTT 600
QY 601 AACACCCCTTTCAACCTGGAAGTCTCACTGACCCCTTGTCTGCTATCAAGCTGCT 660
DB 601 AATACTCTTTCATCCAGGTAAAAGTTAATGCACACCTTGTCCCGCAATTAACCTGCT 660
QY 661 AAGCTGCTCAGCTACCTTGGGAAACGAGCTACCATCACCGCTCAGTGTAACTGGCT 720
DB 661 AATGTTGCTTAAGCTACTTAACTGTAATGATGTACAAATACCGCATATGTAACGTTGCA 720
QY 721 TGTCCTGACGGAAACCATCTCTGCTGTGAGTGAACAACTGGGTGGCTCAGAACACCGAG 780
DB 721 TGCCCTGATGGTACTATAAGTGTGCTGAGTAAATAATTTGGGTAGCACAAAACACTGAA 780
QY 781 TGTAACCACTGTGCTCCTAACTTCTACAAACACAGCGCTCCTAACTTCAACCTCGAACC 840
DB 781 TGTAACCACTGTGCTCCTAACTTCTACAAACACAGCGCTCCTAACTTCAACCTCGAACC 840
QY 841 TCTACCTGTCTGCTGCTCTGCTAACAAGGACTACCGAGCTGAGGCTACCGCTGGAGGA 900
DB 841 AGTACATGCTACCTTGGCCAGCAATAAAGATTATGGTGTGAGCCCACTGCAGGTGCT 900

QY 901 CTTGCTACCTGGCTAAGCAGTGTAAACATCGCTTGTCTTCCACGAAACCGCTATCGCTTCT 960
DB 901 GCCGCTACTTTAGCCAAATAATGTAATATTTGATGTCCTGATGCTACTGCAATTTGCTAGT 960
QY 961 GGAGCTACCAACTACGTGATCCTCCAGACGAGTGTCTGAACCTGCTGCTAACTTCTAC 1020
DB 961 GGAGCAACTAATATGTAATATTATAAACAGAAATGCTAAATTTGCTGCTAACTTTTAT 1020
QY 1021 TTCCAGCGAAACAACTTCCAGGCTGGATCTTCTCGCTGTAAAGCTTGTCTCTGCTAACAG 1080
DB 1021 TTTGATGTAATAATTTCTAGGCAGGAGTAGTAGATGCAAGCATGTCCAGCAATAAA 1080
QY 1081 GTGCAGGAGCTGTGCTACCGCTGTGGAGAACCGCTTACCCTGATGCTGCTGCTGCTG 1140
DB 1081 GTTTAAGGCGCTGTAGCAACTGCAGGTGGTACTGCTACTTTAATTTGCATTAATGTGCCCTT 1140
QY 1141 GAGTGTCTCTGCTGAACCGCTGTCTGACCGAGGACCACTTCTACCTACAAGCAGGTGCT 1200
DB 1141 GAATGCCCTTGTGCTGCTGCTACTCACCCTGGAACAACATCTACTTATAAATAGCAGCA 1200
QY 1201 TCTCAGTGTGTGAAGTGTGCTTAACTTCTACACCACCAAGCAGACCGACTGGGTGGCT 1260
DB 1201 TCTGAATGTGTAAATGCTGCTGCCAATTTTATACTACAAAATAAACTGATTTGGTAGCA 1260
QY 1261 GGAATCGACACCTGCTACCTCTTGTAAACAAGAGCTGACCTTGGAGCTGAGGCTAACCTG 1320
DB 1261 GGTATTGATACATGCTACTAGTTGTAATAAAAAATAAATTTCTGGCGCTGAAGCTAATTTA 1320
QY 1321 CCTCAGTGTCTGAAGAAGAACATCCAGTGTGACCTTCCGCTTAACTTCCCTGCTCTCTCTG 1380
DB 1321 CCTGAATCTGCTAAAAAATAATATAATGTAATGTAATTTTATCAATTTCTCTTA 1380
QY 1381 CTGCTGATCTCTTACTA 1397
DB 1381 TTATTGATTTCTTATTA 1397
RESULT 7
AAA97075
ID AAA97075 standard; DNA; 138 BP.
XX
AC AAA97075;
XX
DT 18-DEC-2000 (first entry)
XX
DE G5 synthetic gene synthesis primer 3205.
XX
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control;
KW PCR primer; ss.
XX
OS Synthetic.
XX
PN WO200046373-A1.
XX
PD 10-AUG-2000.
XX
PF 04-FEB-2000; 2000WO-US02962.
XX
PR 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.
PR 27-APR-1999; 99US-0131121.
XX
PA (UYGE-) UNIV GEORGIA RES FOUND INC.
PA (CORR) CORNELL RES FOUND INC.
PA (CLAR/) CLARK T G.
PA (DICK/) DICKERSON H W.
PA (LINT/) LIN T.
XX
PI Clark TG, Dickerson HW, Lin T;
XX


```
DR WPI; 2000-506071/45.
XX
PT Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
PT infection in fish
XX
PS Disclosure; Figure 12; 144pp; English.
XX
CC This invention relates to novel i-antigen polypeptide sequences.
CC I-antigens or immobilisation antigens are common to a variety of
CC hymenostomatid ciliates and their expression varies in response to
CC environmental stimuli. This invention relates to i-antigens in
CC Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
CC invention includes two polypeptide and polynucleotide sequences for two
CC i-antigens, of 48 and 55 kb. Also included in the invention are
CC antibodies capable of binding to the nucleotide sequences and a method
CC for identifying i. multifiliis serotypes using the nucleotide sequences.
CC A composition (containing the i-antigen nucleotide) capable of eliciting
CC an immune response in fish is useful for prophylaxis, treatment or for
CC controlling i. multifiliis infection in fish. Polynucleotide or protein
CC vaccines comprising a portion of the amplified product encoding an
CC antigenic i-antigen polypeptide obtained is also useful for treating or
CC preventing i. multifiliis infection in fish. Sequences AAA97036-A97042,
CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
CC fragments identified in the invention. Sequences AAA97043-A97064
CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX
SQ Sequence 138 BP; 30 A; 43 C; 32 G; 33 T; 0 other;

Query Match          9.8%; Score 138; DB 21; Length 138;
Best Local Similarity 100.0%; Pred. No. 7.1e-30;
Matches 138; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 313 GCTACCGACTACGCTGCTATCATCACCAGGTGTGTAACCTGTCGCATCACTTCTACAC 372
DB 1 GCTACCGACTACGCTGCTATCATCACCAGGTGTGTAACCTGTCGCATCACTTCTACAC 60

QY 373 GAGAACGCTCTAACTTCAACGCTGAGGCTTCTACCTGTACCGCTGTCTGTGAACCGC 432
DB 61 GAGAACGCTCTAACTTCAACGCTGAGGCTTCTACCTGTACCGCTGTCTGTGAACCGC 120

QY 433 GTGGGAGAGCTGTGACC 450
DB 121 GTGGGAGAGCTGTGACC 138

RESULT 8
AAA97076/C
ID AAA97076 standard; DNA; 123 BP.
XX
AC AAA97076;
XX
XX 18-DEC-2000 (first entry)
XX
XX G5 synthetic gene synthesis primer 3206.
XX
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control;
KW PCR primer; ss.
OS Synthetic.
XX
PN WO200046373-A1.
XX
PD 10-AUG-2000.
XX
XX 04-FEB-2000; 2000WO-US02962.
PF
PR 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR
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```
PR 17-MAR-1999; 99US-0124905.
XX 27-APR-1999; 99US-0131121.
XX
PA (UYGE-) UNIV GEORGIA RES FOUND INC.
PA (CORR ) CORNELL RES FOUND INC.
PA (CLAR/) CLARK T G.
PA (DICK/) DICKERSON H W.
PA (LINT/) LIN T.
XX
XX Clark TG, Dickerson HW, Lin T;
PI WPI; 2000-506071/45.
DR
XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
XX multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
XX infection in fish
XX
PS Disclosure; Figure 12; 144pp; English.
XX
CC This invention relates to novel i-antigen polypeptide sequences.
CC I-antigens or immobilisation antigens are common to a variety of
CC hymenostomatid ciliates and their expression varies in response to
CC environmental stimuli. This invention relates to i-antigens in
CC Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
CC invention includes two polypeptide and polynucleotide sequences for two
CC i-antigens, of 48 and 55 kb. Also included in the invention are
CC antibodies capable of binding to the nucleotide sequences and a method
CC for identifying i. multifiliis serotypes using the nucleotide sequences.
CC A composition (containing the i-antigen nucleotide) capable of eliciting
CC an immune response in fish is useful for prophylaxis, treatment or for
CC controlling i. multifiliis infection in fish. Polynucleotide or protein
CC vaccines comprising a portion of the amplified product encoding an
CC antigenic i-antigen polypeptide obtained is also useful for treating or
CC preventing i. multifiliis infection in fish. Sequences AAA97036-A97042,
CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
CC fragments identified in the invention. Sequences AAA97043-A97064
CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX
SQ Sequence 123 BP; 25 A; 37 C; 39 G; 22 T; 0 other;

Query Match          8.7%; Score 123; DB 21; Length 123;
Best Local Similarity 100.0%; Pred. No. 1.5e-25;
Matches 123; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 430 CGCGTGGGAGGAGCTGTGACCGCTGGAACCGCTGCTACCATCTGCTCAGTGTAAACGTG 489
DB 123 CGCGTGGGAGGAGCTGTGACCGCTGGAACCGCTGCTACCATCTGCTCAGTGTAAACGTG 64

QY 490 GCTTGTCTCTACCGGAACCGCTCTGGACGACGAGTGACCAACCGACTAGTGGCGCTTTTC 549
DB 63 GCTTGTCTCTACCGGAACCGCTCTGGACGACGAGTGACCAACCGACTAGTGGCGCTTTTC 4

QY 550 ACC 552
DB 3 ACC 1

RESULT 9
AAA97071
ID AAA97071 standard; DNA; 117 BP.
XX
AC AAA97071;
XX
XX 18-DEC-2000 (first entry)
XX
XX G5 synthetic gene synthesis primer 3201.
XX
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control;
KW PCR primer; ss.
```

```
DT 18-DEC-2000 (first entry)
XX
XX G5 synthetic gene synthesis primer 3202.
XX
XX Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control;
KW PCR primer; ss.
XX
XX Synthetic.
OS
XX WO200046373-A1.
PN
XX
XX 10-AUG-2000.
PD
XX
XX 04-FEB-2000; 2000WO-US02962.
PF
XX
XX 04-FEB-1999; 99US-0118634.
PR
XX 02-MAR-1999; 99US-0122372.
PR
XX 17-MAR-1999; 99US-0124905.
PR
XX 27-APR-1999; 99US-0131121.
PR
XX
XX (UYGE-) UNIV GEORGIA RES FOUND INC.
XX (CORR ) CORNELL RES FOUND INC.
XX (CLARK/) CLARK T G.
XX (DICK/) DICKERSON H W.
XX (LINT/) LIN T.
XX
XX Clark TG, Dickerson HW, Lin T;
XX
XX WPI; 2000-506071/45.
XX
XX Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
PT infection in fish -
XX
XX Disclosure; Figure 12; 144pp; English.
XX
XX This invention relates to novel i-antigen polypeptide sequences.
CC I-antigens or immobilisation antigens are common to a variety of
CC hymenostomatid ciliates and their expression varies in response to
CC environmental stimuli. This invention relates to i-antigens in
CC Ichthyophthirius multifiliis, a protozoan which is an obligate parasite
CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
CC invention includes two polypeptide and polynucleotide sequences for two
CC i-antigens, of 48 and 55 kD. Also included in the invention are
CC antibodies capable of binding to the nucleotide sequences and a method
CC for identifying I. multifiliis serotypes using the nucleotide sequences.
CC A composition (containing the i-antigen nucleotide) capable of eliciting
CC an immune response in fish is useful for prophylaxis, treatment or for
CC controlling I. multifiliis infection in fish. Polynucleotide or protein
CC vaccines comprising a portion of the amplified product encoding an
CC antigenic i-antigen polypeptide obtained in fish. Sequences AAA97036-A97042,
CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
CC fragments identified in the invention. Sequences AAA97043-A97064
CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX
XX Sequence 104 BP; 21 A; 27 C; 30 G; 26 T; 0 other;
SQ
Query Match 7.4%; Score 104; DB 21; Length 104;
Best Local Similarity 100.0%; Pred. No. 4.2e-20;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 84 GACCAACACCGCTGGACAGGTGGACGACCTGCTGCTTCGTGCGCTGGAG 187
DB 104 GACCAACACCGCTGGACAGGTGGACGACCTGCTGCTTCGTGCGCTGGAG 1
QY 144 GAAGAATCTTACTACAAACACGCTGCTGCTTCGTGCGCTGGAG 187
DB 44 GAAGAATCTTACTACAAACACGCTGCTGCTTCGTGCGCTGGAG 1
RESULT 10
AAA97072/C
TD AAA97072 standard; DNA; 104 BP.
XX
XX AAA97072;
XX
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RESULT 11
AAA97073
ID AAA97073 standard; DNA; 100 BP.
XX
AC AAA97073;
XX
DT 18-DEC-2000 (first entry)
XX
DE G5 synthetic gene synthesis primer 3203.
XX
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control;
KW PCR primer; ss.
XX
OS Synthetic.
XX
PN WO200046373-A1.
XX
PD 10-AUG-2000.
XX
PF 04-FEB-2000; 2000WO-US02962.
XX
PR 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.
PR 27-APR-1999; 99US-0131121.
XX
PA (UYGE-) UNIV GEORGIA RES FOUND INC.
PA (CORR) CORNELL RES FOUND INC.
PA (CLAR/) CLARK T G.
PA (DICK/) DICKERSON H W.
PA (LINT/) LIN T.
XX
PI Clark TG, Dickerson HW, Lin T;
PI WPI; 2000-506071/45.
DR
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PT Novel i-antigen polypeptides and polynucleotides from Ichthyophthirius
PT multifiliis, useful for prophylaxis and treatment of Ichthyophthirius
PT infection in fish -
XX
PS Disclosure; Figure 12; 144pp; English.
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CC hymenostomatid ciliates and their expression varies in response to
CC environmental stimuli. This invention relates to i-antigens in
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CC of freshwater fish causing ichthyophthiriasis or white spot disease. The
CC invention includes two polypeptide and polynucleotide sequences for two
CC i-antigens, of 48 and 55 kD. Also included in the invention are
CC antibodies capable of binding to the nucleotide sequences and a method
CC for identifying i. multifiliis serotypes using the nucleotide sequences.
CC A composition (containing the i-antigen polypeptide) capable of eliciting
CC an immune response in fish is useful for prophylaxis, treatment or for
CC controlling i. multifiliis infection in fish. Sequences AAA97036-A97042,
CC and AAA97060, AAA97065 and AAA97089 represent i-antigen genes and gene
CC fragments identified in the invention. Sequences AAA97043-A97064
CC (excluding AAA97060) and AAA97071-A97088 represent primers used in the
CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX
SQ Sequence 100 BP; 16 A; 35 C; 24 G; 25 T; 0 other;
Query Match 7.1%; Score 100; DB 21; Length 100;
Best Local Similarity 100.0%; Pred. No. 5.9e-19;
Matches 100; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Db 1 CGCTGCTGCTTCGCTGGAGCTTCTACCTGTACCCCTTGTCTCAGAAAGAGCGC 60
QY 225 TGGAGCTCAGCCTAAACCTCCTCGCTACCGCTAACCTGGTG 264
Db 61 TGGAGCTCAGCCTAAACCTCCTCGCTACCGCTAACCTGGTG 100
RESULT 12
AAA97080/C
ID AAA97080 standard; DNA; 100 BP.
XX
AC AAA97080;
XX
DT 18-DEC-2000 (first entry)
XX
DE G5 synthetic gene synthesis primer 3210.
XX
KW Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control;
KW PCR primer; ss.
XX
OS Synthetic.
XX
PN WO200046373-A1.
XX
PD 10-AUG-2000.
XX
PF 04-FEB-2000; 2000WO-US02962.
XX
PR 04-FEB-1999; 99US-0118634.
PR 02-MAR-1999; 99US-0122372.
PR 17-MAR-1999; 99US-0124905.
PR 27-APR-1999; 99US-0131121.
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CC fragments identified in the invention. Sequences AAA97043-A97064
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CC isolation of the i-antigen gene sequences. Sequences AAB25859-B25889 and
CC AAB25893-B25906 represent i-antigen protein and peptide sequences.
XX

SQ Sequence 100 BP; 22 A; 17 C; 32 G; 29 T; 0 other;

Query Match 7.18; Score 100; DB 21; Length 100;
Best Local Similarity 100.0%; Pred. No. 5.9e-19;
Matches 100; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 753 GAACAACCTGGGTGCTCAGAACCGAGTGTACCAACTGTGCTCCTTAACCTCTACAAACA 812
DB 100 GAACAACTGGGTGCTCAGAACCGAGTGTACCAACTGTGCTCCTTAACCTCTACAAACA 41

QY 813 CAACGCTCCTTAACCTTCAACCCGTGAAACTCTACCTGTCTG 852
DB 40 CAACGCTCCTTAACCTTCAACCCGTGAAACTCTACCTGTCTG 1

RESULT 13
AAA97077
ID AAA97077 standard; DNA; 99 BP.
XX
AC AAA97077;
XX
DT 18-DEC-2000 (first entry)
XX
DE G5 synthetic gene synthesis primer 3207.
XX
DE Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control;
KW PCR primer; ss.
XX
OS Synthetic.
XX
PN WO200046373-A1.
XX
PD 10-AUG-2000.
XX
PF 04-FEB-2000; 2000WO-US02962.
XX
PR 04-FEB-1999; 99US-0118634.
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SQ Sequence 99 BP; 27 A; 29 C; 21 G; 22 T; 0 other;

Query Match 7.0%; Score 99; DB 21; Length 99;
Best Local Similarity 100.0%; Pred. No. 1.1e-18;
Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 532 GACTACGTGGCTCTTTTCACCGAGTGTGCAAGTGTGCGCTGAACCTTCTACTACACGGA 591
DB 1 GACTACGTGGCTCTTTTCACCGAGTGTGCAAGTGTGCGCTGAACCTTCTACTACACGGA 60

QY 592 AACACGGAACACCCCTTTTCAACCCGTGGAAGTCTCAG 630
DB 61 AACACGGAACACCCCTTTTCAACCCGTGGAAGTCTCAG 99

RESULT 14
AAA97074/C
ID AAA97074 standard; DNA; 95 BP.
XX
AC AAA97074;
XX
DT 18-DEC-2000 (first entry)
XX
DE G5 synthetic gene synthesis primer 3204.
XX
DE Immobilisation antigen; i-antigen; ichthyophthiriasis; vaccine;
KW white spot disease; freshwater fish; immune response; infection control;
KW PCR primer; ss.
XX
OS Synthetic.
XX
PN WO200046373-A1.
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PD 10-AUG-2000.
XX
PF 04-FEB-2000; 2000WO-US02962.
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PR 04-FEB-1999; 99US-0118634.
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